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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/530,342

04/06/2005

Hiroshi Rikimaru

KNJ-241-A

7772

21828

7590

07/09/2008

CARRIER BLACKMAN AND ASSOCIATES

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SUITE 100

NOVI, MI 48375

EXAMINER

ENSEY, BRIAN

ART UNIT

PAPER NUMBER

2615

NOTIFICATION DATE

DELIVERY MODE

07/09/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/530,342	<b>Applicant(s)</b> RIKIMARU, HIROSHI	
	<b>Examiner</b> Brian Ensey	<b>Art Unit</b> 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/6/05 &amp; 9/26/06</u> .                                    | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Election/Restrictions***

Applicant's election with traverse of species II, claims 6-15, 19 and 20 in the reply filed on 4/6/08 is acknowledged. The traversal is on the ground(s) that a common technical feature exists between species I and elected species II as discussed on pages 2 and 3 in the remarks submitted on 4/6/08. This is found persuasive and the restriction requirement is withdrawn. Claims 1-21 will be examined on the merits.

### ***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 and 2 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending Application No. 10/583,717. Although the conflicting claims are not identical, they are not patentably distinct from each other because only the intended use of the device differs. Claims 1 and 2 of Application No. 10/530,342 are directed to a hearing aid forming a Noise-Vocoded Speech Signal and claims 1 and 2 of copending Application No. 10/583,717 are directed to an apparatus for preventing senility that constructs a Noise-Vocoded Speech Signal. Both applications utilize the same techniques in providing a Noise-Vocoded Speech Signal.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 6, 7, 11 and 12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 2 of copending Application No. 10/583,480. Although the conflicting claims are not identical, they are not patentably distinct from each other because only the intended use of the device differs. Claims 6,

7, 11 and 12 of Application No. 10/530,342 are directed to a training/gaming device outputting a Noise-Vocoded Speech Signal, receiving a response and outputting a result based on the response and claims 1 and 2 of copending Application No. 10/583,480 are directed to a diagnostic method comprising outputting a Noise-Vocoded Speech Signal, receiving a response and providing a diagnosis based on the response. Both applications utilize the same techniques in providing a Noise-Vocoded Speech Signal and response reception to output a result.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 1 and 2 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 2, 11 and 12 of copending Application No. 11/411,758. Although the conflicting claims are not identical, they are not patentably distinct from each other because only the intended use of the device differs. Claims 1 and 2 of Application No. 10/530,342 are directed to a hearing aid forming a Noise-Vocoded Speech Signal and claims 1, 2, 11 and 12 of copending Application No. 11/411,758 are directed to a foreign language learning apparatus/method outputting a Noise-Vocoded Speech Signal. Both applications utilize the same techniques in providing a Noise-Vocoded Speech Signal.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### ***Claim Objections***

Claim 12 is objected to because of the following informalities: There is a period after “Vocoded” in line 1. Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 6, 7, 11, 12 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright et al. U.S. Patent No. 6,109,107.

Regarding claims 1 and 2, Wright discloses a device forming a Noise-Vocoded Speech Sound signal (presents the individual with several patterns of target sound stimuli and mask sound stimuli, col. 3, lines 29-48) that is obtained by dividing at least one portion of an input sound signal into a frequency band signal (Fig. 2) and subjecting one or more of the frequency band signals to noise (provides target-mask stimuli pairs, col. 4, lines 13-58, and outputting the Noise-Vocoded Speech Sound –signal (Individual indicates reception of target stimulus, col. 4, lines 4-6). Wright does not expressly disclose said apparatus is a hearing aid. However, Wright teaches the apparatus for is for perception of transmitted sound. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the Noise Vocoded Speech Signal of Wright to improve a user's sound perception in a hearing aid.

Regarding claims 6 and 7, Wright discloses a device outputting a Noise-Vocoded Speech Sound signal (presents the individual with several patterns of target sound stimuli and mask

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sound stimuli, col. 3, lines 29-48) that is obtained by dividing at least one portion of an input sound signal into a frequency band signal (Fig. 2) and subjecting one or more of the frequency band signals to noise (provides target-mask stimuli pairs, col. 4, lines 13-58, and outputting the Noise-Vocoded Speech Sound –signal (Individual indicates reception of target stimulus, col. 4, lines 4-6), receiving a response from an individual (individuals indicate if they perceive the target stimulus, col. 4, lines 13-58) and outputting the result as to whether the response is correct or incorrect (See col. 4, lines 6-12). Wright does not expressly disclose said apparatus is a training device. However, Wright teaches the apparatus for is for perception of transmitted sound. Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the Noise Vocoded Speech Signal of Wright to improve a user's sound perception in a training device (See col. 3, lines 25-28).

Regarding claims 11 and 12, Wright discloses a device outputting a Noise-Vocoded Speech Sound signal (presents the individual with several patterns of target sound stimuli and mask sound stimuli, col. 3, lines 29-48) that is obtained by dividing at least one portion of an input sound signal into a frequency band signal (Fig. 2) and subjecting one or more of the frequency band signals to noise (provides target-mask stimuli pairs, col. 4, lines 13-58, and outputting the Noise-Vocoded Speech Sound –signal (Individual indicates reception of target stimulus, col. 4, lines 4-6), receiving a response from an individual (individuals indicate if they perceive the target stimulus, col. 4, lines 13-58) and outputting the result as to whether the response is correct or incorrect (See col. 4, lines 6-12). Wright does not expressly disclose said apparatus is a game device. However, Wright teaches the apparatus for is for perception of transmitted sound. Therefore, It would have been obvious to one of ordinary skill in the art at the

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time of the invention to utilize the Noise Vcoded Speech Signal of Wright to improve a user's sound perception (See col. 3, lines 25-28) in a game device to improve the quality of the gaming experience.

Regarding claims 18-20, Wright further discloses a sound signal extractor for extracting only a sound component from an input signal, wherein said at least one portion of an input sound signal is a signal of the sound component extracted by the sound signal extractor (target signal is a sound signal component, col. 3, lines 29-48).

Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright as applied to claims 1 and 2 above, and further in view of Applicant's admitted prior art.

Regarding claim 3, Wright does not expressly disclose a Noise-Vcoded Speech Sound signal in which a component of a -sound source signal is subjected to noise is generated by: extracting a signal with a predetermined frequency band from the sound source signal by a first band filtering portion having a plurality of band filters; extracting an amplitude envelope of each frequency band signal by an envelope extracting portion having an envelope extractor; applying a noise source signal to a second filtering portion having a plurality of band filters to extract a noise signal corresponding to the predetermined frequency band; multiplying an output from the first band filtering portion by an output from the second band filtering portion in a multiplying portion; and accumulating outputs from the multiplying portion in an adding portion. However, the Applicant's admitted prior art discloses a Noise-Vcoded Speech Sound signal in which a component of a -sound source signal is subjected to noise is generated by: extracting a signal with a predetermined frequency band from the sound source signal by a first band filtering portion having a plurality of band filters; extracting an amplitude envelope of each frequency



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band signal by an envelope extracting portion having an envelope extractor; applying a noise source signal to a second filtering portion having a plurality of band filters to extract a noise signal corresponding to the predetermined frequency band; multiplying an output from the first band filtering portion by an output from the second band filtering portion in a multiplying portion; and accumulating outputs from the multiplying portion in an adding portion (See page 1, line 20 to page 2, line 7). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Wright as taught by the Applicant's admitted prior art to ensure that the noise is properly imposed within the required frequency bands.

Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright as applied to claims 1 and 2 above, and further in view of Sturner et al. U.S. Patent No. 5,303,327.

Regarding claims 4 and 5, Wright discloses an apparatus as claimed. Wright does not expressly disclose at least one of a number of the band filters for division into frequency band signals and a frequency of a frequency band boundary can be changed at least through language. However, the use of band filters for division into frequency band signals and changing a frequency of a frequency band boundary at least through language is well known in the art. Sturner teaches outputting a Noise-Vocoded Speech Signal (presents a verbal auditory stimulus to a subject, col. 3, lines 52-54) that is obtained by dividing at least one portion of a sound signal into a plurality of frequency bands; and subjecting the frequency band to noise (enhancing or reducing parts of the spectrum with a masking noise, col. 6, lines 38-47); and providing at least one of a number of the band filters for division into frequency band signals and a frequency of a frequency band boundary can be changed at least through language (system accounts for regional

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dialects, col. 5, lines 48-67). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Wright with the band filters of Sturmer to provide an apparatus which is more versatile in input data reception with respect to language.

Claims 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright as applied to claims 6 and 7 above, and further in view of Applicant's admitted prior art.

Regarding claim 8, Wright does not expressly disclose a Noise-Vocoded Speech Sound signal in which a component of a -sound source signal is subjected to noise is generated by: extracting a signal with a predetermined frequency band from the sound source signal by a first band filtering portion having a plurality of band filters; extracting an amplitude envelope of each frequency band signal by an envelope extracting portion having an envelope extractor; applying a noise source signal to a second filtering portion having a plurality of band filters to extract a noise signal corresponding to the predetermined frequency band; multiplying an output from the first band filtering portion by an output from the second band filtering portion in a multiplying portion; and accumulating outputs from the multiplying portion in an adding portion. However, the Applicant's admitted prior art discloses a Noise-Vocoded Speech Sound signal in which a component of a -sound source signal is subjected to noise is generated by: extracting a signal with a predetermined frequency band from the sound source signal by a first band filtering portion having a plurality of band filters; extracting an amplitude envelope of each frequency band signal by an envelope extracting portion having an envelope extractor; applying a noise source signal to a second filtering portion having a plurality of band filters to extract a noise signal corresponding to the predetermined frequency band; multiplying an output from the first band filtering portion by an output from the second band filtering portion in a multiplying

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portion; and accumulating outputs from the multiplying portion in an adding portion (See page 1, line 20 to page 2, line 7). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Wright as taught by the Applicant's admitted prior art to ensure that the noise is properly imposed within the required frequency bands.

Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright as applied to claims 6 and 7 above, and further in view of Sturner et al..

Regarding claims 9 and 10, Wright discloses an apparatus as claimed. Wright does not expressly disclose at least one of a number of the band filters for division into frequency band signals and a frequency of a frequency band boundary can be changed at least through language. However, the use of band filters for division into frequency band signals and changing a frequency of a frequency band boundary at least through language is well known in the art. Sturner teaches outputting a Noise-Vocoded Speech Signal (presents a verbal auditory stimulus to a subject, col. 3, lines 52-54) that is obtained by dividing at least one portion of a sound signal into a plurality of frequency bands; and subjecting the frequency band to noise (enhancing or reducing parts of the spectrum with a masking noise, col. 6, lines 38-47); and providing at least one of a number of the band filters for division into frequency band signals and a frequency of a frequency band boundary can be changed at least through language (system accounts for regional dialects, col. 5, lines 48-67). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Wright with the band filters of Sturner to provide an apparatus which is more versatile in input data reception with respect to language.

Claims 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wright as applied to claims 11 and 12 above, and further in view of Applicant's admitted prior art.

Regarding claim 13, Wright does not expressly disclose a Noise-Vocoded Speech Sound signal in which a component of a -sound source signal is subjected to noise is generated by: extracting a signal with a predetermined frequency band from the sound source signal by a first band filtering portion having a plurality of band filters; extracting an amplitude envelope of each frequency band signal by an envelope extracting portion having an envelope extractor; applying a noise source signal to a second filtering portion having a plurality of band filters to extract a noise signal corresponding to the predetermined frequency band; multiplying an output from the first band filtering portion by an output from the second band filtering portion in a multiplying portion; and accumulating outputs from the multiplying portion in an adding portion. However, the Applicant's admitted prior art discloses a Noise-Vocoded Speech Sound signal in which a component of a -sound source signal is subjected to noise is generated by: extracting a signal with a predetermined frequency band from the sound source signal by a first band filtering portion having a plurality of band filters; extracting an amplitude envelope of each frequency band signal by an envelope extracting portion having an envelope extractor; applying a noise source signal to a second filtering portion having a plurality of band filters to extract a noise signal corresponding to the predetermined frequency band; multiplying an output from the first band filtering portion by an output from the second band filtering portion in a multiplying portion; and accumulating outputs from the multiplying portion in an adding portion (See page 1, line 20 to page 2, line 7). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Wright as taught by the Applicant's

admitted prior art to ensure that the noise is properly imposed within the required frequency bands.

Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wright as applied to claims 11 and 12 above, and further in view of Sturner et al..

Regarding claims 14 and 15, Wright discloses an apparatus as claimed. Wright does not expressly disclose at least one of a number of the band filters for division into frequency band signals and a frequency of a frequency band boundary can be changed at least through language. However, the use of band filters for division into frequency band signals and changing a frequency of a frequency band boundary at least through language is well known in the art. Sturner teaches outputting a Noise-Vocoded Speech Signal (presents a verbal auditory stimulus to a subject, col. 3, lines 52-54) that is obtained by dividing at least one portion of a sound signal into a plurality of frequency bands; and subjecting the frequency band to noise (enhancing or reducing parts of the spectrum with a masking noise, col. 6, lines 38-47); and providing at least one of a number of the band filters for division into frequency band signals and a frequency of a frequency band boundary can be changed at least through language (system accounts for regional dialects, col. 5, lines 48-67). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Wright with the band filters of Sturner to provide an apparatus which is more versatile in input data reception with respect to language.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sturner in view of the Applicant's admitted prior art.

Regarding claim 16, Sturner discloses a sound output device wherein: a Noise-Vocoded Speech Signal (presents a verbal auditory stimulus to a subject, col. 3, lines 52-54) in which a

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component of a sound source signal is subjected to noise generated (enhancing or reducing parts of the spectrum with a masking noise, col. 6, lines 38-47) and wherein at least one of a number of the band filters for division into frequency band signals and a frequency of a frequency band boundary can be changed at least through language (system accounts for regional dialects, col. 5, lines 48-67). Sturmer does not expressly disclose a Noise-Vocoded Speech Sound signal is generated by: extracting a signal with a predetermined frequency band from the sound source signal by a first band filtering portion having a plurality of band filters; extracting an amplitude envelope of each frequency band signal by an envelope extracting portion having an envelope extractor; applying a noise source signal to a second filtering portion having a plurality of band filters to extract a noise signal corresponding to the predetermined frequency band; multiplying an output from the first band filtering portion by an output from the second band filtering portion in a multiplying portion; and accumulating outputs from the multiplying portion in an adding portion. However, the Applicant's admitted prior art discloses a Noise-Vocoded Speech Sound signal in which a component of a -sound source signal is subjected to noise is generated by: extracting a signal with a predetermined frequency band from the sound source signal by a first band filtering portion having a plurality of band filters; extracting an amplitude envelope of each frequency band signal by an envelope extracting portion having an envelope extractor; applying a noise source signal to a second filtering portion having a plurality of band filters to extract a noise signal corresponding to the predetermined frequency band; multiplying an output from the first band filtering portion by an output from the second band filtering portion in a multiplying portion; and accumulating outputs from the multiplying portion in an adding portion (See page 1, line 20 to page 2, line 7). Therefore, It would have been obvious to one of ordinary skill in the

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art at the time of the invention to modify the system of Sturner as taught by the Applicant's admitted prior art (AAPA) to ensure that the noise is properly imposed within the required frequency bands.

Regarding claim 17, the combination of Sturner in view of the AAPA further discloses at least one of a number of the band filters for division into frequency band signals and a frequency of a frequency band boundary can be changed through automatic language recognition (system accounts for regional dialects, col. 5, lines 48-67).

Regarding claim 21, the combination of Sturner in view of the AAPA further discloses a sound signal extractor for extracting only a sound component from a sound signal, wherein the sound source signal from which the first band filtering portion extracts is a signal of the sound component extracted by the sound signal extractor (target signal is a sound signal component, col. 3, lines 29-48).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Ensey whose telephone number is 571-272-7496. The examiner can normally be reached on Monday - Friday 6:00 AM - 2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Suhan Ni can be reached on 571-272-7505. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Brian Ensey/  
Primary Examiner, Art Unit 2615  
July 2, 2008